

AMENDMENT TO THE CLAIMS

The following "Listing of the Claims" will replace all prior versions and all prior listings of the claims in the present application:

Listing of the Claims:

1-21. (cancelled)

22. (new) A method for killing substantially all of the biological contaminants in a fluid, comprising the steps of:

a) passing a fluid containing biological contaminants through one or more positive-displacement pumps connected in series; and,

b) operating the one or more positive-displacement pumps connected in series at pressure ratios such that the passage of the fluid containing biological contaminants through the one or more positive-displacement pumps connected in series kills substantially all of the biological contaminants in the fluid.

23. (new) The method of claim 22, wherein at least one of the one or more positive-displacement pumps connected in series is operated at a pressure ratio exceeding the recommended operating pressure limitations for the at least one of the one or more positive-displacement pumps connected in series.

24. (new) The method of claim 22, wherein at least one of the one or more positive-displacement pumps connected in series is operated at a pressure ratio of at least 2.0.

25. (new) The method of claim 22, wherein at least one of the one or more positive-displacement pumps connected in series is operated at a pressure ratio sufficient to raise the temperature of the fluid containing biological contaminants passing through the at least one of the one or more positive-displacement pumps connected in series to at least 200 °C.

26. (new) The method of claim 22, wherein the operating pressure ratios of the one or more positive-displacement pumps are the same.
27. (new) The method of claim 22, wherein at least 99.9% of the biological contaminants in the fluid are killed.
28. (new) The method of claim 22, wherein the biological contaminants comprise one more biological contaminants selected from the group consisting of spores, bacteria, viruses, pathogens, fungi, and pollens.
29. (new) The method of claim 28, wherein the biological contaminants comprise anthrax spores.
30. (new) The method of claim 28, wherein the biological contaminants comprise anthrax spores and smallpox viruses.
31. (new) The method of claim 22, wherein at least one of the one or more positive-displacement pumps connected in series is a Roots-type pump.
32. (new) The method of claim 22, wherein the fluid containing biological contaminants comprises a compressible gas.
33. (new) The method of claim 32, wherein at least some of the biological contaminants are entrained in the compressible gas.
34. (new) The method of claim 22, wherein a portion of the heat of the fluid containing biological contaminants exiting from the one or more positive-displacement pumps connected in series is used to heat the fluid containing biological contaminants entering the one or more positive-displacement pumps connected in series.

35. (new) The method of claim 22, wherein the fluid containing biological contaminants exiting from the one or more positive-displacement pumps connected in series is then passed through one or more catalytic converters.

36. (new) The method of claim 22, wherein the killing of substantially all of the biological contaminants in a fluid is increased by increasing the time during which the fluid containing biological contaminants passes through the one or more positive-displacement pumps connected in series.

37. (new) The method of claim 36, wherein the time during which the fluid containing biological contaminants passes through the one or more positive-displacement pumps connected in series is increased by decreasing the passage rate of the fluid containing biological contaminants through the one or more positive-displacement pumps connected in series.

38. (new) A method for killing at least 99.9% of the anthrax spores in a fluid, comprising the steps of:

a) passing a fluid containing anthrax spores through one or more positive-displacement pumps connected in series; and,

b) operating the one or more positive-displacement pumps connected in series at pressure ratios such that the passage of the fluid containing anthrax spores through the one or more positive-displacement pumps connected in series kills at least 99.9% of the anthrax spores in the fluid.

39. (new) The method of claim 38, wherein at least one of the one or more positive-displacement pumps connected in series is operated at a pressure ratio exceeding the recommended operating pressure limitations for the at least one of the one or more positive-displacement pumps connected in series.

40. (new) The method of claim 38, wherein at least one of the one or more positive-displacement pumps connected in series is operated at a pressure ratio of at least 2.0.

41. (new) The method of claim 38, wherein at least one of the one or more positive-displacement pumps connected in series is operated at a pressure ratio sufficient to raise the temperature of the fluid containing biological contaminants passing through the at least one of the one or more positive-displacement pumps connected in series to at least 200 °C.

42. (new) A method for killing at least 99.9% of the anthrax spores in a fluid, comprising the steps of:

a) passing a fluid containing anthrax spores through a positive-displacement pump; and,

b) operating the positive-displacement pump at a pressure ratio of at least 2.0 such that the passage of the fluid containing anthrax spores through the positive-displacement pump kills at least 99.9% of the anthrax spores in the fluid.